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Rare Plant Searches in the Ridgecrest Resource Area
Bureau of Land Management
Ridgecrest Field Office
2003

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Heath McAllister
October 2003

During the winter, spring and summer of 2003 rare plant searches were conducted in the Ridgecrest Resource Area. The majority of the searches took place in the Jawbone-Butterbredt ACEC and Red Rock Canyon State Park. Searches were also conducted in the Rand Mountains OHV area, Owens Peak Wilderness, near Cuddeback Dry Lake, and directly south of the Jawbone-Butterbredt ACEC. The purpose of the investigation was to relocate and find new rare plant populations in Off-Highway Vehicle Areas.

Much of the area investigated had not been inventoried for rare plants, and although this represents the initial baseline for this work, the inventory has yet to be completed. Conditional on subsequent good rainfall years, searches will be continued by BLM ECO (Environmental Careers Organization) interns until the inventory is complete, at which point the populations would be monitored on a regular basis. This document catalogues the first step toward that goal.

Included in this packet are, in order, the total plants found and in which management area they occur, the protocol that was used to complete the searches, descriptions and habitat requirements for each plant, and lastly the raw location and habitat data for all of the surveyed rare plant populations.

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Heath M. McAllister
October 22, 2003

Rare Plant Searches
Bureau of Land Management, Ridgecrest Field Office
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Between February 22 and September 26, 2003 I conducted rare plant searches in the Ridgecrest Resource Area. All of the searches were done in the Jawbone-Butterbredt ACEC, South of Jawbone-Butterbredt ACEC, Rand Mountain OHV recreation area, Owens Peak Wilderness, and Red Rock Canyon State Park. Of primary focus was the Jawbone-Butterbredt ACEC. I both resampled previously known rare plant populations and discovered new populations. Below is a list of the plants found in 2003 along with the management area in which they were found, number of plants, and their status.

Jawbone-Butterbredt ACEC	**Scientific name**	**# of plants**	**Status**
Charlotte's phacelia	*Phacelia nashiana*	17,637	List 1B rare
Creosote rings	*Larrea tridentata*	25	BLM sensitive species
Kelso Creek monkeyflower	*Mimulus shevockii*	2,549	List 1B rare
Limestone dudleya	*Dudleya calcicola*	554	List 4 watch plant
Mojave tarplant	*Hemizonia mohavensis*	15,113	List 1B **State Endangered**
Pygmy poppy	*Canbya candida*	500	List 1B rare
Solitary blazing star	*Mentzelia eremophila*	231,500	List 4 watch plant
Spanish Needle onion	*Allium shevockii*	20	List 1B rare
South of Jawbone ACEC			
Charlotte's phacelia	*Phacelia nashiana*	8,016	List 1B rare
Limestone dudleya	*Dudleya calcicola*	31	List 4 watch plant
Mojave tarplant	*Hemizonia mohavensis*	15	List 1B **State Endangered**
Spanish Needle onion	*Allium shevockii*	18	List 1B rare
Rand Mountains			
Red Rock poppy	*Eschscholzia minutiflora twisselmannii*	490	List 1B rare
Near Cuddeback Dry Lake			
Desert cymopterus	*Cymopterus deserticola*	1	List 1B rare
Solitary blazing star	*Mentzelia eremophila*	2,017	List 4 watch plant
Red Rock Canyon State Park			
Alkali mariposa lily	*Calochortus striatus*	1,215	List 1B rare
Charlotte's phacelia	*Phacelia nashiana*	174	List 1B rare
Mojave fishhook cactus	*Sclerocactus polyancistrus*	5	List 4 watch plant
Mojave spineflower	*Chorizanthe spinosa*	1,600	List 4 watch plant
Red Rock Poppy	*Eschscholzia minutiflora twisselmannii*	13,981	List 1B rare
Red Rock tarplant	*Hemizonia arida*	3,661	List 1B rare
Solitary blazing star	*Mentzelia eremophila*	600	
Owens Peak Wilderness			
Charlotte's phacelia	*Phacelia nashiana*	11,014	List 1B rare
Limestone dudleya	*Dudleya calcicola*	12	List 4 watch plant
9-mile canyon phacelia	*Phacelia novenmilensis*	35	List 1B rare
Mojave tarplant	*Hemizonia mohavensis*	25,475	List 1B **State Endangered**
Owen's Peak Parsley	*Lomatium shevockii*	555	List 1B rare

Of special interest were the discoveries of Spanish Needle onion and Mojave

tarplant in the Jawbone-Butterbredt ACEC and South of Jawbone-Butterbredt ACEC. Spanish Needle onion was previously known only to occur on Spanish Needle and in Sand Canyon in the Tehachapi Mountains. The elevation the onions were at is much lower than the two previously known populations and the substrate significantly different. This third occurance is thus a very significant discovery and merits further searches in the Jawbone-Butterbredt ACEC.

The Mojave tarplant was thought to have been extinct up until the mid 1990's. Therefore finding several populations in the Jawbone-Butterbredt ACEC, one of which is of considerable size, is of great importance in mapping these remnant populations. Much work still needs to be done in the Jawbone-Butterbredt ACEC to map all of the Mojave tarplants on BLM land. The largest Mojave tarplant population found at Cutterbank Spring (approx 30,000 individuals) occurs on private land. If the BLM acquires this land in the future, as is being discussed, it will present a potential management problem since the Mojave tarplant is state listed as Threatened and the area is easily accessible by Off-Highway Vehicles via a dirt road.

Also of potential concern are the Creosote rings that occur within the Dove Springs Open Area. Since riders are permitted to ride Off-Highway Vehicles anywhere in an open area, the Creosote rings are at risk of being impacted. Since the rings occur near the eastern edge of the open area and since there seems to be little traffic in this section, I would advise management to exclude the section with the Creosote rings, and annex an already degraded section bordering on the Dove Springs Open Area to the west.

The Jawbone-Butterbredt ACEC is proving to be an area rich with botanical rarities. Since it is an area that has been little studied in terms of its flora and since it receives substantial Off-Highway Vehicle traffic, I would recommend increased time and effort be spent on searching out and protecting its rare plant populations.

Protocol for Rare Plant Searches in the Ridgecrest Resource Area

Summary: The objective of the searches is to both find new populations of rare plants as well as relocate previously known populations. The populations are documented with UTM points/polygons and relevant population data is recorded in a data dictionary. Once collected, the data is used to update the BLM rare plant database and rare plant GIS files. Additionally, all rare plant occurrences, both newly discovered as well as relocated populations, are entered into electronic California Natural Diversity Database forms, and submitted to update species account records.

Preparation: There are several ways to prepare for rare plant field searches. The first is to obtain a search image for each plant. A search image is a picture or a drawing that can be studied to give the searcher an idea of what they're looking for. Search images can be found in floras, wildflower books and online resources. Following is a list of different resources to consult when looking for a search image:

Floras:

Abrams, Leroy. Illustrated Flora of the Pacific States, Stanford University Press, Stanford, 1940.

Hickman, James C. The Jepson Manual- Higher plants of California, University of California Press, Berkeley, 1993.

Munz, Philip. A California Flora, University of California Press, Berkeley, 1959.

Wildflower books:

Blackwell, Laird R. Wildflowers of the Eastern Sierra and adjoining Mojave Desert and Great Basin, Lone Pine Publishing, 2002.

Jaeger, Edmund. Desert Wild Flowers, Stanford University Press, Stanford, 1969.

MacKay, Pam. Mojave Desert Wildflowers,The Globe Pequot Press, China, 2003.

Stark, Milt. A Flower Watcher's Guide, Milt Stark, 2000.

Stewart, Jon Mark. Mojave Desert Wildflowers, Jon Mark Stewart, 1998.

Online resources: CalFlora – www.calflora.org

USDA plants database – http://plants.usda.gov/

CalPhotos - http://elib.cs.berkeley.edu/photos/flora/

Once a search image is formed, the next step is researching a plant's habitat. The habitat preferences of each plant can be found in the floras listed above. It is a good idea to look at more than one flora when researching a plant's habitat, since they sometimes include different habitat attributes. It is a good idea to photocopy or print out descriptions as well as pictures/drawings of the plants to bring into the field with you for reference.

Next it is important to search out all previous location records for each plant. This is a starting point for looking at the distribution of each plant, and can also give information on what substrates or with which other plants the rare plant grows. A great source for rare plant species accounts is the California Natural Diversity Database (CNDDB). The Ridgecrest field office has several copies of this database, but if for some reason one is not available, the California Department of Fish and Game Wildlife Habitat Data Analysis Branch can be contacted to obtain another copy:
http://www.dfg.ca.gov/whdab/index.html

Using the GIS files from the CNDDB 'rare find' program, the locations of the rare plants in the database can be mapped. Consult the field office GIS specialist for help

with this. These maps allow the searcher to visualize the previously known locations of the rare plants and from that start targeting high potential areas. Potential habitat can also be predicted using the GIS information in the database using attributes like slope, aspect, elevation, proximity to waterways, etc. It should be noted that the predictive power of GIS is only as good as it's data layers. So if a plant's range is determined by an attribute not accounted for by GIS, the prediction may be way off.

Before going out into the field, make sure you have he necessary equipment. The equipment you will need is as follows:

-Digital camera with macro-lens attachments
-Trimble GeoExplorer 3 GPS unit.
-Plant press to make voucher specimens
-Carpenter's ruler
-3ft by 3ft piece of black cloth
-Cellular phone
-First aid kit
-At least 2 liters of water

The first order of business in the field is to visit previous known locations of the plants. Find several populations of each plant (if possible) before searching for new populations. This will allow the searcher to form a mental image of the habitat(s) in which the plant grows. With this habitat model it is possible to both locate potential habitat as well as rule out certain areas as potential habitat. This habitat imaging is just as important, if not more, as having a search image for the plant itself.

When any rare plant population is found, even if it is a previously known location, it should be photographed, described, and UTM's taken. Digital photos of all rare plants should be taken. The photos should include at least one habitat picture, one entire plant picture, one leaf picture and one flower picture. For taking leaf and flower pictures, macro lenses can be attached to the front of the for close-up shots. To use the macro lens the digital screen must be turned on. With the screen on, move the camera toward and away from the plant part until it comes into focus. The camera can also be zoomed for before this is done. Once the part seems to be in focus, push the button down halfway to auto-focus, then all the way to take the shot.

All of the necessary habitat and population information can and should be entered directly into the rare plant search data dictionary in the GeoExplorer 3. To get to the rare plant data dictionary, turn the GeoExplorer on and push the data button. This will bring you to a prompt to either open a selected file, or create a new file. Select create a new file. Now scroll down to highlight the data dictionary field. Press enter for a list of the data dictionaries. Select rare plant searches and press enter. Next scroll up to the file name and press enter. This allows you to name the data file. Name the file with the 4-letter acronym of the rare plant found and the date, or if you're conducting a search, enter the 4-letter acronym of the plant you're looking for plus the abbreviation 'SRCH' and the date. eg. For *Phacelia nashiana* on 4-25-03, enter PHNA 4-25-03, or PHNA SRCH 4-25-03.

The data dictionary will prompt certain information to be entered. The first

choices you are given upon creating a new data dictionary file are plant point,population, search line, and search area. The plant point and population choices are two different options for documenting the location of a rare plant(s), whereas the search line and search area options allow the searcher to record what areas or paths have been searched.
The choice between plant point and population is determined by how many rare plants you've found and how spread out they are. The plant point option is used when only a single rare plant is found or several rare plants within a small area (a circle with a diameter of 5 meters is the maximum). When this option is selected, the GeoExplorer 3 will take several UTM points and average them to give a single point for that location. When rare plants are found over a large area, the population option should be used. When this option is selected, the GeoExplorer 3 will take a UTM point every few seconds and record these points in the form of a polygon. The searcher needs to walk around the population while the GPS is taking points in order to make an accurate polygon.

For both the plant point option and the population option, the GPS will require certain data before the file is closed. This data includes observer,rare plant species, number of plants, habitat, growth stage, threats, slope, aspect, associates, and notes. The GPS will automatically enter the date and time.
The observer is the person recording the data. It is in the form of a pull-down menu. The searcher should use the menu to find his/her name. If the searcher's name is not listed in the menu, it can be noted in the notes section.
The rare plant species refers to the rare plant being documented. There is a list of choices in a pull down menu. If the rare plant you are documenting does not appear in the menu, you can enter it into the notes section.
The number of plants refers to the counted or estimated number of individual plants in the point or population. The up and down arrow keys are used to enter in a number from 1 to 5,000. If the point or population is larger than 5,000, type 5,000 in this field and in the notes add a plus sign (+) and the number of plants over 5,000. (eg. +2,000 for a population of 7,000 plants).
The habitat refers to the surroundings in which the rare plant is found. The options here are in the form of a pull-down menu and are pinyon-juniper, grassland, salty seep, spring, wash, creosote scrub, Joshua tree woodland, dry lake edge, rocky slope, dunes, blackbrush scrub, and other. If you are in a habitat not listed in the menu, chose other and enter it into the notes section.
Growth stage refers to what condition the rare plant is found in. The options in the pull-down menu are vegetative, flowering, fruiting, or dead. If you are recording a large population, chose the option that describes the majority of the plants.
The threats section refers to any threats to the rare plant at that location that are apparent to the observer. The choices in the pull-down menu are none, OHV, cattle, other wildlife, and other. If there is another type of threat to the rare plant, list it in the notes section.
Slope refers to the slope at which the rare plant is found. If the slope is varied over a population try to estimate an average slope. Use a clinometer to determine the slope. The slope is entered as percent.
Aspect refers to the direction of the slope. Therefore if you find a rare plant on the north-facing side of a hill, your aspect is north. The choices in the pull-down menu are north, northeast, east, southeast, south, southwest, west and northwest.

Associates refers to the plants found growing with or nearby the rare plant. These plants are entered in as their four-letter acronym. For instance, *Ambrosia dumosa* would be entered as AMDU. List the dominant plants first, followed by the less abundant plants. The notes section is where any additional information can be entered.

Once the plant point or population has been described and location logged, the file can be closed by pushing the close button.

Both the search line and search area options are for recording where an observer has searched for a rare plant. The search line option should be selected if the observer is searching along a linear path like a hiking trail. For this option the UTM points taken will be connected by the GPS into a line. The search area option should be used if the observer is searching an area. For this option the UTM points will be connected to form a polygon. Upon choosing either search line or search are, the GPS will start logging points and a new screen will appear prompting the searcher to input certain data. The data includes: observer, plant community, associated species, associates (cont.), additional notes. The date and time are automatically generated by the GPS and appear at the top of the screen.

The observer option simply refers to the person doing the searching. There is a pull-down menu with a list of names. If the observer's name does not appear in the menu, it can be typed into the additional notes section.

The plant community refers to the community in which the searches are taking place. The list of communities include pinyon-juniper, creosote scrub, Joshua tree woodland, blackbrush, rocky slope, springs, wash, sandy slope, dry lake edge, and oak woodland. If the search is occurring in a habitat different from any listed above, input it into the additional notes section.

Associated species refers to the species of plants found growing in or around the search location. The plants are entered in as their four-letter acronym. For instance, *Ambrosia dumosa* would be entered as AMDU. List the dominant plants first, followed by the less abundant plants.

The associates (cont.) section is where any additional plants can be entered.

The additional notes section is where any additional information can be added.

Once data has been collected and the files closed, the searcher can then upload those files to a computer. Once the GeoExplorer 3 is placed in it's cradle, it is ready to transfer data. Open GPS Pathfinder Office and select data transfer under the utilities menu. Under the add button, select data files. This will give you a list of the data files you can transfer from the GPS. Select the files you want and click on transfer all. This will transfer the files to the computer, storing them on the hard drive.

Next the files should be post-corrected for accuracy. Post correction removes some of the inevitable satellite error, thus improving the accuracy of your UTM points. To do this click on the red bull's eye on the left side of the GPS Pathfinder Office screen. This will give you a menu labeled Differential Correction. In this menu browse for the files you wish to correct. Next select which data source with which you want to correct your files. Once this is done, click on OK. Once the corrections are done, the computer saves a corrected copy of your data on the hard drive. Make sure to save these files on the computer network so the files are backed up.

Now with these files it is possible to map them in GIS. Consult your GIS

specialist about this.

Remember to fill out CNDDB rare plant occurrence forms for any rare plant or rare plant population that is found. The CNDDB forms require UTM locations. To get UTM point for the polygons, open the files in GPS Pathfinder Office and move the arrow to the center points of the polygons. The UTM's will appear at the bottom of the screen. Electronic copies of the CNDDB forms should be found alongside this protocol.

All pictures should be copied onto the computer network once back from the field. Pictures should be labeled following this format. Use the 4-letter acronym for the plant followed by an underscore, followed by the proper abbreviation for the type of shot, followed by a number. The different abbreviations are as follows: hab-habitat, ent-entire, fl-flower, fls-flowers, lf-leaf, lvs, leaves, st-stem.
Therefore a picture of *Phacelia nashiana* flowers would be labeled like this: PHNA_fls2. The ending number is simply to separate the pictures from one another in case there are multiple similar shots. The photos should then be sorted into a folder with the 4-letter acronym and the date. All same species folders should be put into their own folder.

Rare Plant Descriptions for the Ridgecrest Resource Area

Calochortus striatus 'Alkali mariposa lily' Blooms April-June
Found in alkali meadows and moist Creosotebush scrub (seeps/springs). 1 known population in Red Rock Canyon State Park, west of Red Rooster. Look in salty springy areas where saltbush and saltgrass are present. **List1B**

Cymopterus deserticola 'Desert cymopterus' Blooms March-May
Found in Joshua tree woodland, Mojavean scrub 630-1500m. Restricted to very fine soils, like those that settle on the east side of dry lakes. Found east of Cuddeback Dry Lake. Maybe found in Grass valley towards the southern border, along the southern edge of the Blackwater well road. **List 1B**

Cymopterus ripleyi var. saniculoides 'Sanicle cymopterus' Blooms April-June
Found in Joshua tree woodland, Mojavean desert scrub on sandy soils and carbonate soils. 100-1660m. May be found around the Rand mountains and over to Pilot Knob. Found by Haiwee and Lee Flat and on the north end of the base. It occurs at the north edge of our resource area. **List 1B**

Phacelia nashiana 'Charlotte's phacelia' Blooms April-May
Found extensively on steep (20-40%) slopes of gravelly or rocky tallus, south-facing. Can occur at higher elevations (5,000 ft and higher). Found in Cow Heaven Canyon, Short Canyon, Robber's Roost, Jawbone Canyon, Nelly's Nipple. Found in association with *Salvia columbariae* and *Coreopsis bigelovii*. **List1B**

Eschcholzia minutiflora ssp. Twisselmannii 'Red Rock Poppy' Blooms March-May
Generally restricted to pink or white volcanic tuff (ash). Look in southern Jawbone and in areas bordering Red Rock Canyon State Park. Has one inch flower petal to distinguish it from other subspecies. May be found in Rand mountains and likely occur in the western El Paso mountains. *Petals very yellow. **List1B**

Mimulus shevockii 'Kelso Creek monkeyflower' Blooms April-May
Found on alluvial fans and dry streamlets, dry hills in Kelso valley. Look in Jawbone west of the Sierra crest. Look on either side of SC47 from the crest to Kelso Valley rd and between SC120 and SC47. Found 1 mile north of SC47, ½ mile east Kelso Valley rd. **List1B**

Streptanthus cordatus var. piutensis "Piute Mountain jewelflower Blooms May-July
Found in open chaparral and Piute-cypress stands (Cypressus arizonica ssp. nevadensis). Look in far western Jawbone and Bright Star wilderness. Piute mountain transition zone. Piute cypress found in pinyon-juniper, oak-pine forests. **List1B**

Hemizonia arida 'Red rock tarplant' Blooms May-November
Found in clay soils of washes in Red Rock Canyon State Park. Look in washes and alluvial areas in and around the park. Look in Last Chance canyon and El Paso mountains, and around red sandstone cliffs in Jawbone Canyon. Known populations in Red Rock around Red Cliffs, Red Rooster, and Hagan Canyon in

Red Rock State Park. Ray flowers generally more than 5 (5-10). Herbage and leaves smell like Passionfruit. **List1B**

Hemizonia mohavensis 'Mojave tarplant' Blooms July-September
Found in southwest Mojave Desert. Found at Cutterbank spring and adjacent canyons in southern Jawbone Canyon. Much larger than *H. arida*. Has 5 ray petals. Herbage and leaves smell like Passionfruit. **List1B**

Eriophyllum mohavense 'Barstow wooly sunflower' Blooms April-May
Found in Creosotebush scrub in west-central San Bernardino County. Found west of Barstow. Look for it in the El Paso and Rand mountains. Found on NE side of Cuddyback. May be found growing on more clay soils. **List1B**

Mimulus mohavensis 'Mojave monkeyflower' Blooms early April-mid-May
Found on gravelly banks of desert washes. In washes, on slopes of washes. Reports of many plants from north-west Johnson Valley especially along camp-rock road and transmission lines. **List1B**

Oreonana vestita 'Wooly mountain parsley' Blooms May-September
Found in low montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest growing on gravel or talus. 2285-3500 m. Found in scodie mountains several miles south on PCT from Walker Pass. Possibly found on north side of Pinyon Peak. 354228 1180514 (NAD27)

Orthotrichum shevockii 'Shevock's bristle moss'
Joshua tree woodland, pinyon-juniper woodland on granitic soils or rocky sites; elevation 750 to 2100 m. Look in the north in the Jawbone ACEC at high elevations. Found near summit of Owens peak. Supposedly found across from Chimney peak rd on HWY 178 on rock faces. **List1B**

Mentzelia tridentata 'Threetooth blazing star' Blooms April-May
Found on Mojaveandesert scrub, 700-1160 m. Southeastern Jawbone ACEC is a potential area for this plant. It is found from Camp Rock Road to Mazurka. Generally found on very strange soils. **List 1B**

Phacelia novenmillensis 'Nine-mile canyon phacelia' Blooms in May
Found in pinyon-juniper woodlands on sandy or gravelly soils in clearings. 1645-2640 m.
Look on Pinyon Mountain and other tracts of high-elevation pinyon juniper stands in the Jawbone ACEC. Found all over, but never in any great quantity. It has a very tiny corolla. Maybe found just north of SC120 at the crest. Found along PCT several miles north of Walker Pass. **List1B**

Nemacladus gracilis 'Slender threadplant' Blooms March-April
Found in deciduous woodlands, valley and foothill grasslands, rocky slopes and sandy washes. Found by Tehachapi and Cache peak. Generally more widespread and more recognizable after a burn. Found in sandy canopy openings in Pinyon-Juniper woodlands. Found near Cache peak and at Kennedy meadows. Prefers gravelly soils. May be found in Hangan Canyon in Red Rock State Park. **List4**

Sclerocactus polyancistrus 'Mojave fish-hook cactus' Blooms April-June

Found in Mojavean desert scrub (usually on soils with a high concentration of carbonates), hills and canyons, Joshua tree woodland and limestone areas. 750-2100 m. Some in El Paso mountains. May be found in the Ricardo lava flows in Red Rock State Park. Found in Last Chance Canyon in Red Rock park. **List4**

Chorizanthe spinosa 'Mojave spineflower' Blooms April-July

Found in chenopode (saltbush) scrub, Mojavean scrub, and Joshua tree woodland. Found on the east side of HWY 14 north of collapsed columns and up over ridge. May be found on periphery of Cuddyback dry lake. Found immediately southwest of Tamarisk grove in Red Rock Canyon State Park. **List4**

Chamaesyce vallis-mortae 'Death Valley sandmat' Blooms May-October

Found on sandy or gravelly Mojavean scrub, dry sandy places. 230-1300 m. Very hairy and succulent for a spurge. Found in disturbed places such as around the L.A. Aquaduct. Genertally found on decomposing granite on the east side of the crest between the creosote line and the Pinyon-Juniper line. **List4**

Mentzelia eremophila 'Solitary blazing star' Blooms March-May

Found on Mojavean desert scrub in washes, along roadsides or on flats. 700-1220 m. Found in Rand Mountains, Jawbone-Butterbredt ACEC and Red Rock Canyon State Park. Probably found at other locations in Fremont valley. Seems to have an affinity for heavier (clay) soils like old lakebed sediments. **List4**

Camissonia kernensis ssp. kernensis 'Kern County evening primrose' Blooms in May

Found in Joshua tree and, pinyon-juniper woodland on sandy or gravelly granitic soils. Look at the bottoms of slopes in the large gravel grains on both north and south facing slopes.790-1800m.

Canbya candida 'Pygmy poppy' Blooms March-June

Found in Joshua tree woodland, Pinyon-Juniper woodland on sandy, granitic soils, 600-1200 m. Found in Kelso Valley in same habitat as Kelso Creek monkeyflower, and they often grow side-by-side. Look south on SC47 from Kelso Valley rd. east. West side of 14 along Jawbone border. **List 4**

Dudleya calcicola 'Linestone dudleya' Blooms April-August

Found in chaparral, pinyon and juniper woodland on carbonate soils. Also found on granite cliffs (short canyon). 500-2600m. Found in canyons south of Blue Point in Jawbone canyon. Look in Sage canyon. Maybe the only Dudleya in our immediate area. **List 4**

Mulia coronata 'Crowned mulia' Blooms March- April

Found in open desert scrub and woodlands in heavy soils (clay or silt).Found in Joshua tree woodland and Pinyon-Juniper woodland. 1000-1600 m. Very tiny and may have a very short flowering season. **Possibly at Freeman gulch-**

Rare plant occurances in the Ridgecrest Resource Area for 2003

Rare plant species# of PlantsDateNorthingEastingHabitatPoint or PolygonManagement AreaAlkalai mariposal20030-Apr-03 3911526.422410580.1431Salty seepPolygonRed Rock State ParkSpanish needle onion2023-May-033907973.812401516.4251Rocky slopePolygonJawbone-Butterbredt ACECSpanish needle onion527-May-033904685.574398739.0413Rocky slopePolygonSouth of Jawbone ACECSpanish needle onion1327-May-033904693.107398735.137Rocky slopePolygonSouth of Jawbone ACECCharlotte's phacelia1000025-Feb-033941901.931416933.9984Rocky slopePolygonOwens Peak WildernessCharlotte's phacelia28819-Mar-03 3908968.85399353.0664Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia501-Apr-033916557.484416492.2435 WashPolygonRed Rock State ParkCharlotte's phacelia801-Apr-033916559.927416504.9411Rocky slopePolygonRed Rock State Park Charlotte's phacelia501-Apr-033917002.146416410.4815WashPolygonRed Rock State ParkCharlotte's phacelia819-Mar-03 3908802.123399389.9461Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia1627-May-033904688.25398790.3755 Rocky slopePolygonSouth of Jawbone ACECCharlotte's phacelia12-Mar-033939062.517414062.948Creosote scrub PointJawbone-Butterbredt ACECCharlotte's phacelia26-Feb-033908606.831405538.1767Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia212-Mar-033938975.224413977.1073Creosote scrubPolygonJawbone-Butterbredt ACECCharlotte's phacelia 8012-Mar-033939009.038413971.6758Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia1 4412-Mar-03 3939023.391413960.301Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia1 60012-Mar-03 3939032.727413976.8607Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia800023-Mar-03 3903427.586400072.5366Rocky slopePolygonSouth of Jawbone ACECCharlotte's phacelia1 40012-Mar-033939072.539413951.2522 Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia1 15527-Feb-033908598.886405052.7197Disturbed sandyslope PolygonJawbone-Butterbredt ACECCharlotte's phacelia1 022-Apr-033908050.86401533.426Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia8626-Feb-033908584.322405563.4655Creosote scrubPolygonJawbone-Butterbredt ACECCharlotte's phacelia1 926-Feb-033908531.706405578.4801Creosote scrubPolygonJawbone-Butterbredt ACECCharlotte's phacelia2427-Feb-03 3908672.091404607.747Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia527-Feb-033908721.536404637.5284 Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia3522-Apr-033908023.092401524.9735Rocky slope PolygonJawbone-Butterbredt ACECCharlotte's phacelia1 49124-Apr-033942205.623407142.3339Rocky slope PolygonJawbone-Butterbredt ACECCharlotte's phacelia1 5622-Feb-033911750.283411650.3605Rocky slopePolygonRed Rock State ParkCharlotte's phacelia700027-Feb-033908625.944405016.6711Disturbed sandyslopePolygonJawbone-Butterbredt ACECCharlotte's 005-Jun-033951119411079Rocky slopePolygonOwens Peak WildernessCharlotte's phacelia1 008-May-033937096.588407885.533 Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia3519-Mar-033939210.859414197.4313Rocky slope PolygonJawbone-Butterbredt ACECCharlotte's phacelia1 62019-Mar-033939482.126414377.6651Rocky slope PolygonJawbone-Butterbredt ACECCharlotte's phacelia22019-Mar-033939274.848414239.8673Rocky slope PolygonJawbone-Butterbredt ACECCharlotte's phacelia1 20019-Mar-033939242.493414179.2353Rocky slope PolygonJawbone-Butterbredt ACECCharlotte's phacelia44719-Mar-033939265.021414170.1343Rocky slope PolygonJawbone-Butterbredt ACECCharlotte's phacelia1 019-Mar-033939248.467414066.0684Rocky slope PolygonJawbone-Butterbredt ACECCharlotte's phacelia61414-Mar-033952290.26416985.4392Rocky slopePolygonOwens Peak WildernessCharlotte's phacelia50019-Mar-033939440.602414379.0754Rocky slopePolygonJawbone-Butterbredt ACECCharlotte's phacelia20119-Mar-033939241.154414056.8002Rocky slopePolygonJawbone-Butterbredt ACECCreosote Ring520-Jan-03 3919115409460Creosote scrubPointJawbone-Butterbredt ACECCreosote 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slopePointJawbone-Butterbredt ACECLimestone dudleya94 22-Apr-033908001.794401559.4767Rocky slopePolygonJawbone-Butterbredt ACECLimestone dudleya722-Apr-03 3908255.4401502.0334Rocky slopePolygonJawbone-Butterbredt ACECLimestone dudleya1022-Apr-033908097.582401536.9831 Rocky slopePolygonJawbone-Butterbredt ACECLimestone dudleya2022-Apr-033907961.503401502.5279Rocky slope PolygonJawbone-Butterbredt ACECLimestone dudleya311-Apr-033908340.258401445.249Rocky slopePointJawbone-Butterbredt ACECLimestone dudleya21023-May-033908340401576CanyonPolygonJawbone-Butterbredt ACECLimestone dudleya2122-Apr-03 3907854.872401504.6728Rocky slopePolygonJawbone-Butterbredt ACECLimestone dudleya3127-May-033904684.848398745.2155 Rocky slopePolygonSouth of Jawbone ACECLimestone dudleya314-Mar-033952302.997416995.638Rocky slopePointOwens Peak WildernessLimestone dudleya614-Mar-033952296.196416988.126Rocky slopePointOwens Peak WildernessLimestone dudleya3 14-Mar-033952304.722416976.789Rocky slopePointOwens Peak WildernessKelso Monkeyflower5120-Mar-03 3935484.475388616.5325Joshua tree woodlandPolygonJawbone-Butterbredt ACECKelso Monkeyflower7620-Mar-03 3935502.884388638.2908Joshua tree woodlandPolygonJawbone-Butterbredt ACECKelso Monkeyflower7720-Mar-03

3935499.745388649.5798Joshua tree woodlandPolygonJawbone-Butterbredt ACECKelso Monkeyflower234521-Mar-03
3930592.292391114.5182Joshua tree woodlandPolygonJawbone-Butterbredt ACECMojave spineflower160008-Apr-03
3911516.586411539.4539Patina-like hillPolygonRed Rock State ParkMojave tarplant427-May-033904752.397398720.43Wash
PointSouth of Jawbone ACECMojave tarplant2526-Sep-033952348416186Other (See Notes)PointOwens Peak WildernessMojave
tarplant8026-Sep-033952354416200SpringPointOwens Peak WildernessMojave tarplant527-May-033904741.633398736.8825Wash
PolygonSouth of Jawbone ACECMojave tarplant527-May-033904746.569398742.81WashPolygonSouth of Jawbone ACECMojave
tarplant3523-May-033907962.906401497.6055WashPolygonJawbone-Butterbredt ACECMojave tarplant4223-May-03
3907757.953401506.0194WashPolygonJawbone-Butterbredt ACECMojave tarplant30026-Sep-033952397415889Wash
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127-May-033904733.846398746.64WashPointSouth of Jawbone ACECMojave tarplant123-May-033908045.537401518.294Wash
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tarplant1526-Sep-033952411415914WashPointOwens Peak WildernessMojave tarplant523-May-033907834.055401500.921Wash
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123-May-033908042.904401514.29WashPointJawbone-Butterbredt ACECMojave tarplant30026-Sep-033952368416275Spring
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tarplant1000027-May-033905913.822397812.1857Rocky slopePolygonJawbone-Butterbredt ACECMojave tarplant500011-Apr-03
3905993.895397875.6117SpringPolygonJawbone-Butterbredt ACECMojave tarplant15526-Sep-033952558416442Spring
PolygonOwens Peak WildernessMojave tarplant223-May-033907893.652401499.558WashPointJawbone-Butterbredt ACECOwen's
pk parsley5006-Jun-033952457.606410379.169Rocky slopePointOwens Peak WildernessOwen's pk parsley10006-Jun-03
3952320.468410691.307Rocky slopePointOwens Peak WildernessOwen's pk parsley40506-Jun-033952319.169410894.4583Rocky
slopePolygonOwens Peak WildernessPygmy poppy50002-May-033934809.265388781.5645Joshua tree woodland
PolygonJawbone-Butterbredt ACECRed Rock poppy1802-Apr-033914386.027411518.996Rocky slopePolygonRed Rock State Park
Red Rock poppy2004-Apr-033912965.217410794.977Rocky slopePointRed Rock State ParkRed Rock poppy504-Apr-03
3913343.45410769.875Rocky slopePointRed Rock State ParkRed Rock poppy104-Apr-033913332.903410778.868Rocky slope
PointRed Rock State ParkRed Rock poppy604-Apr-033913331.315410795.102Rocky slopePointRed Rock State ParkRed Rock poppy
104-Apr-033913279.029410758.1603Rocky slopePolygonRed Rock State ParkRed Rock poppy42708-Apr-03
3913747.947410885.9616Volcanic-ash apronPolygonRed Rock State ParkRed Rock poppy33002-Apr-033914299.843411515.5489
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Red Rock poppy49011-Apr-033911697.083442227.8757Creosote scrubPolygonRand MountainsRed Rock poppy50004-Apr-03
3912923.82410795.4148Rocky slopePolygonRed Rock State ParkRed Rock poppy200004-Apr-033913236.238410752.2028Rocky
slopePolygonRed Rock State ParkRed Rock poppy25004-Apr-033913301.858410766.9063Rocky slopePolygonRed Rock State Park
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3914139.914411061.2819WashPolygonRed Rock State ParkRed Rock poppy70002-Apr-033914280.468411291.8976Rocky slope
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Rock poppy77302-Apr-033913522.16410713.8028WashPolygonRed Rock State ParkRed Rock poppy80004-Apr-03
3913503.494410813.3746Rocky slopePolygonRed Rock State ParkRed Rock poppy100004-Apr-033913128.505410826.916Rocky
slopePolygonRed Rock State ParkRed Rock tarplant2004-Apr-033912887.836410935.3957WashPolygonRed Rock State ParkRed
Rock tarplant50004-Apr-033913508.745410811.1444Rocky slopePolygonRed Rock State ParkRed Rock tarplant904-Apr-03
3913361.629410851.0003Rocky slopePolygonRed Rock State ParkRed Rock tarplant3104-Apr-033912822.957410915.2418Wash
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Rock tarplant3004-Apr-033913321.474410773.6267Rocky slopePolygonRed Rock State ParkRed Rock tarplant704-Apr-03
3912785.582410899.1343Rocky slopePolygonRed Rock State ParkRed Rock tarplant504-Apr-033913090.602410858.7235Rocky
slopePolygonRed Rock State ParkRed Rock tarplant704-Apr-033912857.89410801.7406Rocky slopePolygonRed Rock State ParkRed
Rock tarplant135002-Apr-033913597.173410410.5097Other (See Notes)PolygonRed Rock State ParkRed Rock tarplant104-Apr-03
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3704-Apr-033912892.363410801.6566Rocky slopePolygonRed Rock State ParkRed Rock tarplant104-Apr-03
3913451.244410824.883Rocky slopePointRed Rock State ParkRed Rock tarplant404-Apr-033913171.565410830.82Rocky slope
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tarplant38002-Apr-033914062.797411342.514Rocky slopePolygonRed Rock State ParkRed Rock tarplant74302-Apr-03
3913725.804411333.2972WashPolygonRed Rock State ParkRed Rock tarplant1530-Apr-0339111526410576Salty seepPolygonRed
Rock State ParkRed Rock tarplant18819-Mar-033911644.437411003.0081Salty seepPolygonRed Rock State ParkMojave fishhook
cactus101-Apr-033917991.555416526.685Creosote scrubPointRed Rock State ParkMojave fishhook cactus101-Apr-03
3917907.848416352.692Rocky slopePointRed Rock State ParkMojave fishhook cactus301-Apr-033917897.988416426.05Creosote
scrubPointRed Rock State ParkSolitary blazing star60001-Apr-033917071.57416299.0969Rocky slopePolygonRed Rock State Park
Solitary blazing star66331-Mar-033911995.615442628.0022Creosote scrubPolygonNear Cuddeback Dry LakeSolitary blazing star
15950028-Mar-033916889407622Blackbrush scrubPolygonJawbone-Butterbredt ACECSolitary blazing star6700028-Mar-03
3916767406638Blackbrush scrubPolygonJawbone-Butterbredt ACECSolitary blazing star500028-Mar-033918065406681Blackbrush
scrubPolygonJawbone-Butterbredt ACECSolitary blazing star5431-Mar-033911765.788442548.3148Disturbed dirt-pile PolygonNear
Cuddeback Dry LakeSolitary blazing star50031-Mar-033911311.349459447.0229Dry lake edgePolygonNear Cuddeback Dry Lake
Solitary blazing star80031-Mar-033911267.875460413.0907Dry lake edgePolygonNear Cuddeback Dry Lake